ABSTRACT OF THE DISCLOSURE

A radio link control (RLC) entity (200) supports plural TCP connections across a radio interface and is employed with or in a radio access network. The radio link control (RLC) entity processes RLC protocol data units (PDUs) obtained from a medium access control (MAC) layer to obtain Internet Protocol (IP) packets for the plural TCP connections. The radio link control (RLC) entity uses availability of Internet Protocol (IP) packets for a given TCP connection to control separately for the given TCP connection in-sequence delivery to an Internet Protocol layer of Internet Protocol (IP) packets without regard to availability of Internet Protocol (IP) packets of another of the plural TCP connections. The radio link control (RLC) entity has both a sending side (which sends RLC PDUs to the lower level medium access control (MAC) layer) and a receiving side (which receives RLC PDUs from the lower level medium access control (MAC) layer). To control in-sequence delivery of the Internet Protocol (IP) packets for the given TCP connection, the radio link control (RLC) entity inserts and uses port-specific sequence numbers in the RLC protocol data units which carry the Internet Protocol (IP) packets for the given TCP connection. The port-specific sequence numbers for the RLC protocol data units are assigned on a sending side of the radio link control (RLC) entity. The port-specific sequence numbers are carried in an extension of a length indicator field of a header of the RLC protocol data units. A predetermined value in a header extension type field of the header of the RLC protocol data units indicates that the port-specific sequence numbers are carried in an extension of a length indicator field of the header of the RLC protocol data units.